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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/527,343	03/17/2000	Timothy E. Giorgetta	AMCC4100	3311

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EXAMINER	
WILSON, ROBERT W	

ART UNIT	PAPER NUMBER
2661	4

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/527,343	GIORGETTA ET AL.	
	Examiner	Art Unit	
	Robert W Wilson	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 19-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-10,12-15,19-21,28 and 29* is/are rejected.

7)☒ Claim(s) *6,11,22-27,30 and 31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 July 0200* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.0 The application of Timothy E. Giorgetta entitled, "TRANSPOSABLE FRAME SYNCHRONIZATION STRUCTURE" filed 3/17/2000 and amended as an RCE per 4/1/04 was examined. **Claims 1-15 & 19-31** are pending.

Claim Rejections - 35 USC § 103

2.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.0 **Claims 1-5 & 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuyoshi (JP405276153A).

Referring to **Claim 1**, Tatsuyoshi (JP405276153A) teaches: A method for varying the frame synchronization structure of an information stream (Figure 1 or Abstract or Para 0002-0009 and Para 0013) the method comprising:

Providing selection bits (Figure 1 or Abstract or Para 0002-0009 and Para 0013);

Receiving a first stream of information (Figure 1 or Abstract or Para 0002-0009 and Para 0013)

In response to the selection bits, selecting a first arrangement of synchronization bits in the first stream of information (Figure 1 or Abstract or Para 0002-0009 and Para 0013); and

In response to selecting the first arrangement of synchronization bits, organizing the first information stream into header and data sections (Figure 1 or Abstract or Para 0002-0009 and Para 0013)

Tatsuyoshi does not expressly call for: organizing the first information into header and data sections but teaches frame synchronizing bit in a data signal.

It would have been obvious to one of ordinary skill in the art at the time of the invention organizing frame synchronizing bit in a data signal performs the same function as organizing the first information into header and data sections.

In Addition:

Regarding **Claim 2**, In which synchronization of the first stream of information (Figure 1 or Abstract or Para 0002-0009 and Para 0013); and

In response to reading the first arrangement of synchronization bits, organizing the first information stream into header and data sections (Figure 1 or Abstract or Para 0002-0009 and Para 0013)

Regarding **Claim 3**, in which the selection of the first arrangement of synchronization bits includes selecting a first arrangement of bits in the header section (Figure 1 or Abstract or Para 0002-0009 and Para 0013)

Regarding **Claim 4**, in which the first organization of the first stream of information into the first frame structure of header and data sections includes each header section having a plurality of m bits (Figure 1 or Abstract or Para 0002-0009 and Para 0013. It would have been obvious to one of ordinary skill in the art at the time of the invention that the number of bits would vary)

In which the selection of the first arrangement of synchronization bits includes selecting a number of bits in the range from zero to m bits in the header section (Figure 1 or Abstract or Para 0002-0009 and Para 0013. It would have been obvious to one of ordinary skill in the art at the time of the invention that the number of bits would vary)

Regarding **Claim 5**, in which the selection of the first arrangement of synchronization bits includes selecting the bit position of each synchronization bit in the header section (Figure 1 or Abstract or Para 0002-0009 and Para 0013. It would have been obvious to one of ordinary skill in the art at the time of the invention that the number of bits would vary)

Regarding **Claim 15**, in which the reception of the first stream of information includes receiving the information in a protocol selected from the group consisting of datacom, telecom, fiber channel, SONET, SDH, and Gigabit Ethernet protocols (datacom per Figure 1 or Abstract or Para 0002-0009 and Para 0013.)

Claim Rejections - 35 USC § 103

4.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.0 **Claims 7-10 & 12-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsuyoshi (JP405276153A) in view of Synchronous Optical Network (SONET) Transport Systems: Common Generic Criteria.

Referring to **Claim 7-10 & 12-14**, Tatsuyoshi teaches: The method of **Claim 2**.

Tatsuyoshi does not expressly call for: further comprising: deinterleaving the first stream of information into a plurality of n parallel data streams; in which the organization of the first stream of information into the first frame structure includes each parallel data stream having a header and a data section; and in which the selection of the first arrangement of synchronization bits includes selecting n arrangements of synchronization bits, one arrangement for each parallel data stream header section as claimed in **Claim 7**; in which the selection of the first arrangement of synchronization bits in the header sections of the n parallel data streams includes selecting a unique arrangement of synchronization for each parallel data stream header section as claimed in **Claim 8**; in which the deinterleaving of the first stream of information includes forming four parallel data streams; and in which the reading of synchronization bits from the header sections of the parallel data streams includes reading a first group of synchronization bits from the first parallel data stream header section, a second group of synchronization bits from the second parallel data stream header section, a third group of synchronization bits from the third parallel data stream header section, and a fourth group of synchronization bits from the fourth parallel data stream header section as claimed in **Claim 9**; in which the selection of the first arrangement of overhead bits includes: selecting a bit position for each of the first group of bits in the first header section; selecting a bit position for each of the second group of bits in the second header section; selecting a bit position for each of the third group of bits in the third header section; and selecting a bit position for each of the fourth group of bits in the fourth header section as claimed in **Claim 10**; further comprising; organizing a second stream of information in the first frame structure; and selecting a second arrangement of synchronization bits to be written in the header section of the second stream of information as claimed in **Claim 12**; further comprising; transmitting the second stream of information with the second arrangement of synchronization bits as claimed in **Claim 13**; in which the second stream of information is organized into a plurality of n parallel data streams; in which the selecting of the second arrangement of synchronization bits includes writing n arrangements of synchronization bits, one arrangement of reach parallel data stream header sections; and further comprising interleaving the n parallel data stream in the second stream of information as claimed in **Claim 14**.

Synchronous Optical Network (SONET) Transport Systems: Common Generic Criteria teaches: further comprising: deinterleaving the first stream of information into a plurality of n parallel data streams; in which the organization of the first stream of information into the first frame structure includes each parallel data stream having a header and a data section; and in which the

selection of the first arrangement of synchronization bits includes selecting n arrangements of synchronization bits, one arrangement for each parallel data stream header section (H4 indicator or sync bits for Virtual Tributaries per Pgs 3-3 to 3-23) as claimed in **Claim 7**; in which the selection of the first arrangement of synchronization bits in the header sections of the n parallel data streams includes selecting a unique arrangement of synchronization for each parallel data stream header section (H4 indicator or sync bits for Virtual Tributaries per Pgs 3-3 to 3-23. It would have been obvious to one of ordinary skill in the art to add n tributaries in order to build a design which scales) as claimed in **Claim 8**; in which the deinterleaving of the first stream of information includes forming four parallel data streams; and in which the reading of synchronization bits from the header sections of the parallel data streams includes reading a first group of synchronization bits from the first parallel data stream header section, a second group of synchronization bits from the second parallel data stream header section, a third group of synchronization bits from the third parallel data stream header section, and a fourth group of synchronization bits from the fourth parallel data stream header section (H4 indicator or sync bits for Virtual Tributaries per Pgs 3-3 to 3-23.) as claimed in **Claim 9**; in which the selection of the first arrangement of overhead bits includes: selecting a bit position for each of the first group of bits in the first header section; selecting a bit position for each of the second group of bits in the second header section; selecting a bit position for each of the third group of bits in the third header section; and selecting a bit position for each of the fourth group of bits in the fourth header section (H4 indicator or sync bits for Virtual Tributaries per Pgs 3-3 to 3-23. It would have been obvious to one of ordinary skill in the art to add n tributaries in order to build a design which scales) as claimed in **Claim 10**; further comprising; organizing a second stream of information in the first frame structure; and selecting a second arrangement of synchronization bits to be written in the header section of the second stream of information as (H4 indicators or second stream per Pgs 3-3 to 3-23) claimed in **Claim 12**; further comprising; transmitting the second stream of information with the second arrangement of synchronization bits (H4 indicators which are synchronization bits in the second stream per Pgs 3-3 to 3-23) as claimed in **Claim 13**; in which the second stream of information is organized into a plurality of n parallel data streams (VTs or parallel streams per Pgs 3-3 to 3-23. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize n streams in order for the design to scale); in which the selecting of the second arrangement of synchronization bits includes writing n arrangements of synchronization bits (H4 bits or synchronization bits per Pgs 3-3 to 3-23), one arrangement for each parallel data stream header sections (Pgs 3-3 to 3-24); and further comprising interleaving the n parallel data stream in the second stream of information (Pg 3-3 to 3-24) as claimed in **Claim 14**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the feature cite above of Synchronous Optical Network (SONET) Transport Systems: Common Generic Criteria to the method of Tatsuyoshi in order to build a network which is standards compliant.

Claim Rejections - 35 USC § 103

6.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.0 **Claims 19-21 & 28-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimatsu (U.S. Patent No.: 6,018,406) in view of Tatsuyoshi (JP405276153A).

Referring to **Claim 19**, Ishimatsu (U.S. Patent No.: 6,018,406) teaches: A selectable frame synchronization structure transmission repeater (Fig 2 & Fig 3)

A repeater input port to accept a first stream of information including a first arrangement of synchronization bits (600-1, 600-2,...600-m per Fig 3. Please note that it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate the functions of 100 and 200 per Fig 3 into a single unit in order to save space)

Decoder having a first input connected to the repeater input port to receiving the first stream of information (126 per Fig 2. Please note that it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate the functions of 100 and 200 per Fig 3 into a single unit in order to save space)

Ishimatsu does not expressly call for: the decoder reading the first arrangement of synchronization bits to organize the first stream of information into a first frame structure including a data section and a header section, the decoder having a second input for selecting the first arrangement of synchronization bits to be read but teaches decoding per Figs 2 & 3.

Tatsuyoshi (JP405276153A) teaches: the decoder reading the first arrangement of synchronization bits to organize the first stream of information into a first frame structure including a data section and a header section, the decoder having a second input for selecting the first arrangement of synchronization bits to be read (per Figure 1 or Abstract or Para 0002-0009 and Para 0013)

It would have been obvious to add the decoder reading the first arrangement of synchronization bits to organize the first stream of information into a first frame structure including a data section and a header section, the decoder having a second input for selecting the first arrangement of synchronization bits to be read of Tatsuyoshi to the decoder of Ishimatsu in order to respond flexibly to changing conditions per Tatsuyoshi per Para 0013.

In Addition Tatsuyoshi teaches:

Regarding **Claim 20**, in which the decoder synchronizes the first stream of information into the first frame st4ructure including a header section having a plurality of m bits (per Figure 1 or Abstract or Para 0002-0009 and Para 0013)

In which the decoder selection of the first arrangement of overhead bits includes selecting a number of synchronization bits in the range from zero to m bits (per Figure 1 or Abstract or Para 0002-0009 and Para 0013)

Regarding **Claim 21**, in which the decoder selection of the first arrangement of synchronization bits includes selecting bit position of the synchronization bits in the header section (per Figure 1 or Abstract or Para 0002-0009 and Para 0013)

Regarding **Claim 28**, in which the repeater input receives the first stream of information in a protocol selected from the group consisting of datacom, telecom, fiber channel, SONET, SDH, and Gigabit Ethernet protocols (datacom per Figure 1 or Abstract or Para 0002-0009 and Para 0013.)

Referring to **Claim 29**, Ishimatsu (U.S. Patent No.: 6,018,406) teaches: A selectable frame synchronization structure communication system (Fig 2 & Fig 3)

A transmitter having an output to provide a first steam of information in a first frame structure with a header including a first arrangement of synchronization bits of the first stream of information (300 & 400 per Fig 3 or transmitter. Please note that it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate the functions of 300 & 400 per Fig 3 into a single unit in order to save space)

A repeater input port to accept a first stream of information including a first arrangement of synchronization bits (600-1, 600-2,...600-m per Fig 3. Please note that it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate the functions of 100 and 200 per Fig 3 into a single unit in order to save space)

Decoder having a first input connected to the repeater input port to receiving the first stream of information (126 per Fig 2. Please note that it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate the functions of 100 and 200 per Fig 3 into a single unit in order to save space)

Ishimatsu does not expressly call for: the decoder reading the first arrangement of synchronization bits to organize the first stream of information into a first frame structure including a data section and a header section, the decoder having a second input for selecting the first arrangement of synchronization bits to be read but teaches decoding per Figs 2 & 3.

Tatsuyoshi (JP405276153A) teaches: the decoder reading the first arrangement of synchronization bits to organize the first stream of information into a first frame structure including a data section and a header section, the decoder having a second input for selecting the first arrangement of synchronization bits to be read (per Figure 1 or Abstract or Para 0002-0009 and Para 0013)

It would have been obvious to add the decoder reading the first arrangement of synchronization bits to organize the first stream of information into a first frame structure including a data section and a header section, the decoder having a second input for selecting the first arrangement of synchronization bits to be read of Tatsuyoshi to the decoder of Ishimatsu in order to respond flexibly to changing conditions per Tatsuyoshi per Para 0013.

Claim Objections

8.0 Claims 6, 11, 22-27, & & 30-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The closest prior art is Ishimatsu (U.S. Patent No.: 6,018,406), Tatsuyoshi (JP405276153A), and Synchronous Optical Network (SONET) Transport Systems: Common Generic Criteria. Ishimatsu teaches a repeater, transmitter, decoder, encoder, and synchronization. Tatsuyoshi teaches a method and apparatus for increasing of decreasing the frame synchronization bits in a data signal. Synchronous Optical Network (SONET) Transport Systems: Common Generic Criteria teaches the standards for building a SONET network. The closest prior art Ishimatsu Tatsuoshi, and Synchronous Optical Network (SONET) Transport Systems: Common Generic Criteria either singularly or in combination fail to anticipate or render the following claim limitations obvious:

"Further providing content bits, ..." as claimed in **Claims 6 & 22.**

"in which the selection of the first arrangement of synchronization bits includes selecting the number of synchronization bits in the first, second, third, and fourth groups of synchronization bits as claimed in **Claim 11**.

"an encoder having an output to provide a second stream of information organized in the first frame structure with a header section, the encoder having an input for selecting a second arrangement of synchronization bits to be written in the header section ; and a repeater output connected to the encoder output to provide the second stream of information" as claimed in **Claim 30**.

In Addition:

Claims 23-27 are dependent upon **Claim 22**; **Claim 31** is dependent upon **Claim 30.**

Response to Argument

9.0 Applicant's arguments with respect to **Claims 1-15 & 19-31** have been considered but are moot in view of the new ground(s) of rejection.

The examiner respectively disagrees with the applicant's argument that the new reference Tatsuyoshi (JP405276153A) fails to teach or disclose "providing selection bits". Tatsuyoshi (JP405276153A) teaches providing selection bits per Figure 1 or Abstract or Para 0002-0009 and Para 0013

Conclusion

10.0 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W Wilson whose telephone number is 703/305-4102. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Olms can be reached on (703) 305-4703. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Robert W. Wilson

Robert W Wilson
Examiner
Art Unit 2661

RWW
April 21, 2004